

Resonant Elastic Soft X-ray Scattering in Stripe-ordered Cuprates

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We present an investigation of charge density wave (CDW) order in cuprate superconductors using resonant elastic soft x-ray scattering at the Cu L and O K edges. The energy dependence of the measured scattering intensity is analyzed using x-ray absorption measurements to determine the atomic scattering form factors, $f(\omega)$, at Cu and O sites. In oxygen-ordered $\text{YBa}_2\text{Cu}_3\text{O}_{6.5}$, we show this calculation to be in excellent agreement with experiment. A similar analysis of the scattering intensity as a function of energy in CDW (stripe) ordered phase of $(\text{La, Sr, Nd})_2\text{CuO}_4$ lends insight into the microscopic details of the CDW order in the cuprates. New results from the CLS REIXS beamline will be presented.